Water Conservation Plan
Small Community Well Source of Supply

Granite Fields Golf Club
Kingston, New Hampshire

The following documentation presents the Water Conservation Plan for the small community well groundwater source of supply for the proposed small community development to be associated with the Granite Fields Golf Club property located at 7 Route 125 in Kingston, New Hampshire. This Water Conservation Plan has been prepared in accordance with the New Hampshire Department of Environmental Services (NH DES) water conservation administrative rules as defined in Env-Wq 2101, more specifically Env-Wq 2010.04.

Introduction

This Water Conservation Plan has been prepared for a new community water system (The Development) to be located on the property located at 7 Route 125 in Kingston, New Hampshire. Currently, Diamond Oaks Golf Club, LLC, owns the site. This Water Conservation Plan has been prepared in relation to groundwater withdrawals from Proposed Test Well No. 1 (PTW-1) that is proposed to supply a new community water system. The new community will consist of thirty-four (34) two-bedroom homes along with a Meeting House and Pro-Shop/Snack Bar. This Water Conservation Plan has been prepared on behalf of the following applicant:

Jim Dufrense
Granite Fields Golf Club
Diamond Oaks Golf Club, LLC (legal ownership name)
Physical Address: 7 Route 125
Kingston, NH 03848
Mailing Address: P.O. Box 175
Plaistow, NH 03865
Phone: (603) 642-9977, (603) 770-4841

This Water Conservation Plan has been prepared by the following:

Abigail Fopiano
Project Hydrogeologist
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The Development is designed for 34-two bedroom elderly housing units along with a Meeting House and Pro-Shop/Snack Bar. The housing units consist of thirty-four (34) two bedroom single-family homes for an over 55 years of age adult living community. The Meeting House will be utilized primarily as a meeting/conference area for the homeowners and will be used on an on-demand basis only. The total capacity of the Meeting House is 60 persons; it will incorporate a large town hall style room with one set (men and women's) of bathrooms (total of two toilets and two sinks) and a small utility kitchen (two sinks, one residential sized oven and refrigerator). The Pro-Shop and Snack Bar will be utilized as a gathering place primarily golf course patrons. The Snack bar will consist of 140-seats; all snack bar items are served through "paper" service (i.e. pre-packaged foods and cooler items). The kitchen for the Snack Bar will consist of one sink, one residential sized oven and microwave and two commercial refrigerators. The building will include two sets of bathrooms (total of eight toilets and four sinks). There will be five seasonal full time employees in the Pro-shop and Snack Bar. There are no equipment cleaning areas or locker rooms associated with this building. All domestic fixtures to be installed in each building will meet the current water efficiency standards in order to promote water conservation. No individual connection will receive greater than 20,000 gallons per day.

In terms of water use trends and population trends, the Development is not anticipated to reach full build out or full capacity within the next three years. Housing units within the Development are designed to be occupied year round, however it is expected that some housing units will be seasonal housing, only occupied in the summer months. In addition, any irrigation use related to the Development will be seasonal and use of the Pro-Shop/Snack Bar will be seasonal.

PROPOSED WATER CONSERVATION PLAN DETAILS

Env-Wq 2101.04 - Requirements for New Community Water Systems.

A. Community water systems that are subject to RSA 485:3 and which are established after the effective date of these rules shall comply with the requirements specified in this section.

The Development meets the criteria outlined in Env-Wq 2101.04(a) and will comply with the requirements of Env-Wq 2101.04.

B. Each large community water system shall install water meters for all of the following:

1. Public sector water users except firefighting;
2. Private water users; and
3. All sources of water.

The Development will install a source meter at the proposed well wellhead. The Development will install individual water meters on connections for the Meeting House, the Pro-Shop/Snack Bar, and each individual housing unit. These service connection

meters will be installed and metered prior to system start-up. At this time, no zone meters are proposed to be installed within the system. The exact type of source meter and additional inline meters to be installed is not known.

C. The water system shall size the water meters required by **(B)**, above, in accordance with the specifications of the manufacturer.

All meters to be installed will be sized in accordance with the specifications of the manufacturer.

D. In selecting, installing, and maintaining water meters, the water system shall comply with procedures and protocols described in "Manual of Water Supply Practices, Water Meters-Selection, Installation, Testing, and Maintenance," document identification number AWWA M6, American Water Works Association, 1999.

All meters to be installed will be selected, installed, and maintained with the procedures and protocols described in "Manual of Water Supply Practices, Water Meters- Selection, Installation, Testing, and Maintenance" document identification number AWWA M6 American Water Works Association, 1999. The Development will test and calibrate the source meter on an annual basis. All service meters will be tested and calibrated at least once every three years. Once all meters are in use, the Development will implement a replacement program for any meters that are in need of replacement.

E. The water system shall read the water meters required by **(B)(1)** and **(2),** above, at least once every 90 days.

Once online, the Development will read all water user meters on either a monthly or quarterly basis (at least every 90 days). All service meters will be accessible from the external of the house, as so reduce the access issues during meter reading. The meters will be read either manually or automatically through electronic devices. Completion of meter reading will not take more than 4 hours per meter reading event.

F. The water system shall read the water meters required by **(B)(3),** above, at least once every 30 days.

Once online, the Development will manually read the source meters at least once a week. If a requirement of the Large Groundwater Withdrawal Permit, the Development will install a source meter capable of automatically recording daily water usage rates.

G. The water system shall implement a water audit and leak detection program in Accordance with "Manual of Water Supply Practices, Water Audits and Leak Detection" document identification number AWWA M36, American Water Works Association, 1999.

The Development will use a qualified subcontractor to conduct a water audit and leak detection program in accordance with the "Manual of Water Supply Practices, Water Audits and Leak Detection" document identification number AWWA M36, American Water Works Association, 1999. Upon utilization of the community water system, the Development will implement a program to check for leaks within the distribution system every two years. A water audit of this system will be performed every year.

Yearly water audits will be performed by the Development or by a qualified subcontractor. The water audits will be performed through a mass balance analysis. At this time it is anticipated that all leak detection work will be contracted out. It is unknown what material the piping will be made out of (i.e. metal or plastic). It is anticipated that the subcontractor hired to perform the leak detections will use the appropriate tools necessary to properly detect leaks.

H. The water system shall repair all leaks identified by the activities required by **(G)** within 60 days of discovery unless a waiver is obtained in accordance with **Env-Wq 2101.09.**

The Development will repair all leaks discovered during water audits and leak detection within 60 days.

I. The water system shall estimate the volume and percentage of unaccounted-for water in the water system once every year using protocols described in Manual of Water Supply Practices, Water Audits and Leak Detection" document identification number AWWA M36, American Water Works Association, 1999.

Once every year, the Development will use a qualified subcontractor to estimate the volume and percentage of unaccounted-for water using protocols and procedures described in "Manual of Water Supply Practices, Water Audits and Leak Detection" document identification number AWWA M36, American Water Works Association, 1999.

J. The water system shall prepare and submit a response plan to the department within 60 days if the percentage of unaccounted-for water in the water system calculated pursuant to **(I)**, above, exceeds 15% of the total volume of water introduced to the water system.

The Development will submit a response plan to NH DES within 60 days if the percentage of unaccounted-for water in the system exceeds 15%.

K. The response plan prepared in accordance with **(J),** above, shall identify how the water system intends to reduce the percentage of unaccounted-for water to below 15% within 2 years, except for leaks that have been identified which must be repaired in accordance with paragraph **(H)**, above.

The response plan, prepared in accordance with **(J),** above, will identify actions the Development will take to reduce the percentage of unaccounted-for water to below 15% within 2 years, excluding the repair of leaks identified during leak detection.

L. The department shall approve the response plan within 90 days if it contains recommended actions that comply with the requirements specified in **(K),** above.

M. The water system shall implement the response plan in accordance with the approved schedule upon receiving approval from the department.

Upon approval from the NH DES, the Development will implement the response plan in accordance with the approved schedule.

N. The water system shall implement pressure reduction within one year of obtaining approval of a new source of water when:

1. Technically feasible;
2. Consistent with water system industry standards and regulations; and
3. Consistent with other public health and safety considerations.

Upon approval, and when technically feasible, the Development will implement pressure reduction within one year. At this time in the Development planning, it is not possible to estimate a minimum and maximum water pressure for the system. An estimate of the minimum and maximum water pressure will be presented to NH DES prior to system start-up.

O. The water system shall adopt a rate structure that promotes water conservation, as follows:

1. The rate structure shall be based on:
    a. A unit price of water; and
    b. The amount of water used by each connection to the water system; and

2. The unit price of water for residential connections shall:
    a. Remain the same; or
    b. Increase with the volume of water consumed.

Water supply usage for each housing unit will be billed individually on at least a quarterly basis. In addition, there will be a fixed base fee included into each homeowners bill that incorporates the costs associated with the meeting house. Water usage associated with the pro-shop/snack bar will be billed directly to the business entity owning the pro-shop/snack bar.

At this time the rate structure for the Development water usage is not known. However, The Development proposes to adopt a rate structure that is based on a unit price of water. In order to promote water conservation, the rate structure will incorporate penalty fees or

increases in the unit price of water for homeowners who exceed a certain amount of water usage (to be determined). The Development will notify NH DES of the rate structure prior to the first billing cycle. It is anticipated that this type of rate structure will aid in water conservation related to irrigational practices.

P. The water system shall complete a water conservation educational outreach initiative using materials prepared by the department as follows:

1. The water system shall implement the applicable public notification and outreach requirements to municipal governments within its service area in accordance with **Env-Wq 2101.11**; and

In accordance with Env-Wq 2101.11, the Development provided a copy of the Proposed Water Conservation Plan as well as a copy of the NH DES administrative rules Env-Wq 2010 to the municipality (Town of Kingston) and regional planning board (Rockingham Regional Planning Commission) on April 4, 2012 in request of public comments. Comments were received by the Town of Kingston and addressed in this Water Conservation Plan. Comments were not submitted by the Rockingham Regional Planning Commission. The Development requests that the Town of Kingston continue to update local site planning requirements to reflect these rules in order to promote water efficiency.

2. The water system shall implement an educational outreach initiative for its customers to promote water conservation immediately upon obtaining approval for the new source.

The Development will supply all owners of the proposed residential properties with NH DES-prepared water conservation educational materials upon purchase and/or occupancy of the condominiums. The Development will continually (at least every year) promote water efficiency efforts to residents through education mailings, similar to the NH DES Water Efficiency Practices Factsheets, in order to reduce consumption. The educational mailings will provide information pertaining to water conservation best management practices for domestic and irrigation uses. For example, the educational mailings will detail how the irrigation system layout and equipment (i.e. location of sprinkler heads, automated system settings, etc.) as well as how the grass selection and top soil mixtures proposed to be utilized as ground cover for the Development promote water conservation. In addition, the proposed development will utilize water-conserving low-flow fixtures (that are required to have an energy star rating for water consumption) in all new construction buildings and homes. At this time there are no plan to implement water use restrictions.

Q. Activities completed in accordance with **(B)** through **(P),** above, shall be completed by water system personnel under the supervision of a certified operator pursuant to **Env-Ws 367.**

The water conservation activities described in **(B)** through **(P)** will be completed by water system personnel under the supervision of a certified operator and/or the Developments' Homeowner's Association President. In addition, the water system will complete and submit the required online NH DES forms at least once every three years documenting how compliance with the requirements of Env-Wq 2101 is being achieved.

Certification

I certify that I have read this Water Conservation Plan, understand the responsibilities of the water system as referenced in the plan, and that all information provided is complete, accurate, and not misleading.

Signature Owner Name (print): Jim Dufresne

System Owner Signature: _____ Date: 5/29/12